

THE TEMPE MECHANICAL CODE

The Tempe Mechanical Code consists of the Uniform
(9)
Mechanical Code (U.M.C.),
1991 Edition, and the City of Tempe Amendments to the 1991
U.M.C. contained in Section 8-600, Chapter 8, of the Tempe
City Code and printed herein.

The requirements contained herein shall take precedence
over any conflicting requirements in the Uniform Mechanical
Code. Identification is by corresponding Uniform
Mechanical Code, Chapter and Section. Amendments are
underlined for easier identification.

CHAPTER 1

Section 104(a) Additions, Alterations and Repairs. (9)

Additions, alterations or repairs may be made to any
mechanical system without requiring the existing mechanical
system to comply with all the requirements of this code,
provided:

1. The addition, alteration or repair conforms to that
required for a new mechanical system.
2. Additions, alterations or repairs shall not cause an
existing system to become unsafe, or create unhealthy
or overloaded conditions.
3. Additions, alterations or repairs to an existing
building or structure within any 12 month period do
not exceed fifty percent of the value of the building
or structure.

When additions, alterations or repairs within any 12
month period exceed fifty percent (50%) of the value
of an existing building or structure, the mechanical
system shall be made to conform to the requirements
for new mechanical systems.

Minor additions, alterations and repairs to existing
mechanical systems may be installed in accordance with the
law in effect at the time the original installation was
made, when approved by the building official.

CHAPTER 2

Section 201(e) Authority to Disconnect. (9) The building
official shall have the authority to disconnect fuel-gas
service, electric power or energy service supplied to a
building, structure, premise, electric service or equipment
regulated by this code where necessary to eliminate an
immediate hazard to life, health or property, or to
disconnect any fuel-gas or electric service or equipment
that in the judgement of the building official is dangerous
to life or property.

(9)

Section 201(f) Authority to Condemn. Whenever the building official ascertains that any mechanical system, equipment or portion thereof, regulated by this code is unsafe, defective, improperly installed or otherwise does not comply with this code, the building official shall order in writing that such system or equipment either be removed or restored to comply. The notice shall fix a time limit for compliance with such order, and such system or equipment shall not be used after expiration of the time fixed by said notice.

If the violations continue to exist after expiration of the time fixed by the notice, the building official may order the fuel-gas or electric service to the mechanical system or equipment to be disconnected by notice in writing to the fuel-gas or electric utility or supplier specifying the particulars in which the installation is in violation.

When any mechanical system or equipment is maintained in violation of this code, and in violation of any notice issued pursuant to the provisions of this section, the building official may institute any appropriate action to prevent, restrain, correct or abate the violation.

Section 202. Unsafe Mechanical Systems and Equipment.
(9) Mechanical systems or equipment regulated by this code which are unsafe, or which constitute a fire or health hazard or are otherwise dangerous to life are, for purposes of this section, unsafe. Use of mechanical systems or equipment regulated by this code constituting a hazard to safety, health or public welfare by reason of inadequate maintenance, dilapidation, obsolescence, fire hazard, disaster or abandonment is, for purposes of this section an unsafe use. Unsafe mechanical systems or equipment are hereby declared to be public nuisances and shall be abated by repair, rehabilitation, demolition or removal in accordance with the procedures set forth in the Tempe City Code. As an alternative, the building official or other employee or official of this jurisdiction as designated by the governing body may institute other appropriate action to prevent, restrain, correct or abate the violation.

Section 203. Board of Appeals. is repealed.

CHAPTER 3

(9)

Section 303(a) Issuance. The application, plans, specifications, computations and other data filed by an applicant for permit shall be reviewed by the building official. Such plans may be reviewed by other departments of this jurisdiction to verify compliance with any applicable laws under their jurisdiction. If the building official finds that the work described in an application for a permit and the plans, specifications and other data filed therewith are in "COMPLIANCE" with the requirements of this code and other pertinent laws and ordinances, and that the fees specified in section 304 have been paid, the building official shall issue a permit therefor to the applicant.

EXCEPTION: For the purposes of this section, fees paid pursuant to Sec. 304(g) and (h) shall be considered as paid at the time of issuance.

When the building official issues the permit, all plans, specifications and other data found to be in compliance with this code and other pertinent laws and ordinances shall be stamped or otherwise identified as "APPROVED." Such approved plans and specifications shall not be changed, modified or altered without authorization from the building official, and all work regulated by this code shall be done in accordance with the approved plans.

The building official may issue a permit for the construction of part of a mechanical system before the entire plans and specifications for the whole system have been submitted or approved, provided adequate information and detailed statements have been filed complying with all pertinent requirements of this code. The holders of such permit shall proceed at their own risk without assurance that the permit for the entire building, structure or mechanical system will be granted.

(9)

Section 303(d) Expiration. 1. Work Not commenced.

Every permit issued under the provisions of this code shall be valid for a period of one year from the date of issuance provided, however, that any permit shall expire if work authorized by such permit is not commenced and an approved inspection obtained within 180 days from the date of issuance. An approved inspection shall be an inspection that is requested and approved pursuant to Section 305.

Before work can be commenced, a new permit shall be obtained and the fee therefore shall be based on the total amount of the work and the fee for issuance of the permit.

EXCEPTION: Where no work has commenced within 180 days from the date of issuance, the permit may be reinstated without a fee upon written request of the owner or owner's agent, provided work commences and an approved inspection is obtained within one year of the original date of issuance.

2. Work Commenced. Every permit issued under the provisions of this code shall be valid for a period of one year from the date of issuance, provided, however, that any permit shall expire 180 days after the last approved inspection. An approved inspection shall be an inspection that is requested and approved pursuant to Section 305.

Before work can be continued or resumed, a new permit shall be obtained and the fee thereof shall be determined by the Building Official based upon the uncompleted portion of the work from the last approved inspection, and the fee for issuance.

EXCEPTIONS: 1. A permit shall not expire if the time between approved inspections does not exceed 180 days.

2. If an approved inspection is not obtained within 180 days of the last approved inspection, the permit may be reinstated once without a fee upon written request of the owner or owner's agent provided that no substantial changes have been made in the original plans and specifications for such work and provided further that an approved inspection is obtained within one year of the last approved inspection.

Whenever a new permit is required pursuant to this section, the provisions of Sections 302, 303 and 304 shall apply, and the building or structure shall comply with the requirements of this code except as provided in Section 104.

(9)

Section 303 (f) Extent of Work. No mechanical work other than that described on the permit shall be commenced

without first obtaining an additional permit as required in this section.

Section 304(c) Plan Review Fees. is repealed. (2)

(9) **Section 304(d) Expiration of Plan Review. is repealed.**

Section 304(f) Fee Refunds. (2) The building official may authorize the refunding of any fee paid hereunder except the fee For Issuance of Each Permit when all of the following conditions apply:

1. No work has been done for which a permit is required, and
2. Written application is made by the original permittee not later than 180 days after the date of fee payment.

Section 304 (g) Charge Accounts and Bonds. (1)(9) Any person, firm, corporation or political subdivision may elect to pay permit and inspection fees on a monthly charge account basis, provided he has first filed with the building official a bond for the benefit of the city in the sum of one thousand dollars (\$1,000.00). The bond shall be executed by said person, firm, corporation or political subdivision and by a surety company maintaining an agency in the state or in lieu thereof, the bond shall be in writing on a form to be provided by the city and accompanied by a deposit of cash in the amount of one thousand dollars (\$1,000.00). All bonds shall be conditioned that the person named herein shall pay, within forth-five (45) days of issuance of any mechanical permits, all permit and inspection fees accrued under section 304(a) and (b). Said bond shall be nontransferable.

Section 304(h) Payment. (1)(9) Permit and inspection fee charges accrued during each month shall be promptly remitted to the city by the fifteenth day of the following month after issuance of the permit, or as often during the month as the accrued charges equal the value of the bond or cash deposit. If any person, firm, corporation or political subdivision fails or refuses to pay such accrued permit and inspection fees by the fifteenth day of the following month after issuance of the permit, the building official may refuse any further mechanical permits and may refuse to inspect any work for which permit fees have not been paid.

Section 305(b) Required Inspections. (9) The building official shall make the following inspections and shall either approve that portion of the work as completed or shall notify the permit holder or the agent where the work fails to comply with this code:

1. **Underground or Under-Floor Inspections:** This inspection shall be made after the underground, under-floor or in slab ducts, piping and control systems authorized by the permit have been installed, but before any backfilling, concrete or floor sheathing is installed, including the sub-floor.

2. **Rough Mechanical:** This inspection shall be made after the mechanical systems authorized by the permit, such as ducts, piping, control and venting systems have been installed and before any such systems have been covered or concealed.
3. **Final:** This inspection shall be made after all of the mechanical systems and appliances authorized by the permit have been installed and after all portions thereof which are to be covered or concealed are so concealed.

Table No. 3-A MECHANICAL PERMIT FEES. is amended as follows:

(7)(8)

TABLE NO. 3-A - MECHANICAL PERMIT FEES

For issuance of each permit\$ 10.00

In addition, for:

Installation, Relocation or Replacement of

Furnace or burner (forced air or gravity type), including attached ducts and vents

Up to and including 100,000 Btu/h or 29 KW ... 9.00

Over 100,000 Btu/h or 29 KW 11.00

Floor furnace, including vent 9.00

Heater (suspended, recessed wall, or floor-mounted unit heaters)
9.00

Refrigeration and Heat Pump

To and including 3 H.P. (or Tons Refrigeration)
9.00

Over 3 -to and including 15 H.P. (or Tons Refrigeration) 16.50

Over 15 -....to and including 30 H.P. (or Tons Refrigeration) 22.50

Over 30 -....to and including 50 H.P. (or Tons Refrigeration) 33.50

Over 50 H.P. (or Tons Refrigeration) 56.00

Absorption System

To and including 100,000 Btu/h or 29 KW 9.00

Over 100,000 or 29 KW to and including 500,000 Btu/h or 146 KW 16.50

Over 500,000 or 146 KW to and including 1,000,000 Btu/h or 292 KW 22.50

Over 1,000,000 or 292 KW to and including	
1,750,000 Btu/h or 512 KW	33.50
Over 1,750,000 Btu/h or 512 KW	56.00

Air Handling Unit, including attached ducts

To and including 10,000 c.f.m. 6.50

Over 10,000 c.f.m. 11.00

NOTE: Fee shall not apply to an air handling unit which is a portion of a factory assembled appliance, comfort cooling unit, evaporative cooler or absorption unit for which a fee is required elsewhere in this schedule.

Evaporative Cooler (other than portable) 6.50

Ventilation fan (connected to a single duct) ... 4.50

Ventilation System 6.50

NOTE: Fee shall not apply to a ventilation system which is a portion of a factory assembled heating or air-conditioning system for which a fee is required elsewhere in this schedule.

Appliance Vent 4.50

NOTE: Fee shall not apply to an appliance vent which is a portion of a factory assembled appliance for which a fee is required elsewhere in this schedule.

Hood served by mechanical exhaust including ducts
6.50

Incinerator

Domestic
11.00

Commercial or Industrial 45.00

Appliance or piece of equipment regulated by the Mechanical Code, but not classed in other appliance categories or for which no other fee is listed in this schedule 6.50

Process Piping

Hazardous process piping system

One to four outlets 4.00

Five or more outlets, per outlet 1.00

Nonhazardous process piping system

One to four outlets 2.00

Five or more outlets, per outlet 0.50

Repair of, Alteration of, or Addition to:

Heating appliance, refrigeration unit, comfort cooling unit, absorption unit or comfort heating, cooling absorption or evaporative cooling system, including controls 9.00

Other Inspection Fees: (8)

1. Inspections outside of normal business hours, per hour (minimum charge - two hours) \$60.00
2. Reinspection fees assessed under provisions of Section 305(f), per hour \$45.00
3. Inspections for which no fee is specifically indicated, per hour \$45.00 (minimum charge - one-half hour)

CHAPTER 4

Section 403, DEFINITIONS - A is amended by revising the definition of APPROVED as follows:

APPROVED is approval by the building official as the result of investigation (9) and tests, or by reason of accepted principals or tests by recognized authorities, or COMPLIANCE as defined in Section 405.

Section 405, DEFINITIONS - C is amended by adding the definition of COMPLIANCE as follows:

COMPLIANCE is conformance to the applicable requirements of this code (9) and other pertinent laws and ordinances so far as ascertained by or made known to the building official by inspection or by review of plans, specifications and other data to the extent of the building official's resources. Plan review and inspection services are provided to help minimize instances of code violations. Responsibility for conformance of a mechanical system is the responsibility of the owner and the owner's agents.

Section 417, DEFINITIONS - O is amended by revising the definition of OCCUPANCY CLASSIFICATION as follows:

OCCUPANCY CLASSIFICATION. For the purpose of this code, the (9) occupancy classification shall be as defined in the Uniform Building Code as adopted.

Section 421, DEFINITIONS - S is amended by revising the definition of SMOKE DETECTOR as follows:

SMOKE DETECTOR. is an approved listed and labelled (9) device that senses visible or invisible particles of combustion.

CHAPTER 5

Section 503(b) Oil-Burning Appliances. ⁽²⁾ is repealed.

Section 510(a) Condensate Disposal. ⁽⁵⁾ Condensate from air-cooling coils, fuel-burning condensing appliances and the overflow from evaporative coolers and similar water-supplied equipment shall be collected and discharged to an approved plumbing fixture or disposal area. The drain shall have a slope of not less than 1/8 inch per foot and shall be of approved corrosion-resistant pipe not smaller than the drain outlet size as required in either Subsection (b) or (c) below for air-cooling coils or condensing fuel-burning appliances, respectively. Condensate or waste water shall not drain over a sidewalk or walkway.

CHAPTER 6

No Amendments

CHAPTER 7

Section 706(f) Prohibited Sources. Outside or return air for a heating system shall not be taken from the following locations:

1. Closer than 10 feet from an appliance vent outlet, a vent opening ⁽⁹⁾ of a plumbing drainage system or the discharge outlet of an exhaust fan, unless the outlet is 3 feet above the outside-air inlet.

(Remainder of the Section is unchanged.)

Section 710(e) Platform. ⁽³⁾ A furnace located on a roof shall be installed on a substantial level platform.

(Remainder of Section is repealed)

Section 710(f) Catwalk. ⁽³⁾ is repealed.

Section 710(h) Access. Every furnace installed in or on an exterior wall of a building, which is designed so that the burners or controls must be serviced from outside the building, shall be readily accessible.

Every furnace located on the roof of any building shall be readily accessible.

EXCEPTIONS: 1. Portable ladder or other portable means may be ⁽¹⁾ used for access to an appliance located on the roof of:

(a) A one or two story Group R, Division 1 or 3 and Group M Occupancy Building.

(b) A one story building not exceeding 16 ft. in height from the adjacent grade to the point of access to the roof.

2. A fixed ladder may terminate 8 feet above adjacent grade.

3. Permanent ladders for equipment access need not be provided at ⁽⁹⁾ parapets, walls or differences of roof elevation not more than 42 inches in height.

Permanent ladders providing roof access shall: ⁽⁶⁾

1. Have side railings which extend at least 42 inches above the roof edge or parapet wall.
2. Have landings less than 18 feet apart measured from the finished grade.
3. Be at least 16 inches in width.
4. Have rungs not more than 14 inches on center.
5. Have a minimum of 6 inch toe space.

CHAPTERS 8 and 9

No Amendments

CHAPTER 10

Section 1002(a) General. Supply air, return air and outside air for heating, cooling or evaporative cooling systems shall be conducted through duct systems constructed of metal as set forth in Tables Nos. 10-A, 10-B and 10-C; metal ducts complying with U.M.C. Standard No. 10-2 with prior approval; or factory-made air ducts complying with U.M.C. Standard No. 10-1. Ducts, plenums and fittings may be constructed of asbestos cement, concrete, clay or ceramics when installed in the ground or in a concrete slab, provided the joints are tightly sealed.

Corridors shall not be used to convey air to or from rooms if the corridor is required to be of fire-resistive construction by Section 3305 of the Building Code.

Concealed building spaces or independent construction within buildings may be used as ducts or plenums.

When gypsum products are exposed in ducts or plenums, the air temperature shall be restricted to a range from 50°F. to 125°F. and moisture content shall be controlled so that the material is not adversely affected. Gypsum products shall not be exposed in ducts serving evaporative coolers.

Venting systems ~~and exhaust ducts~~ shall not extend into or through ducts or ⁽⁹⁾ plenums.

EXCEPTION 6 to Section 1002(b) is amended as follows:

6. Electrical wiring in plenums shall comply with ⁽⁹⁾ the Electrical Code.

(Remainder of Exception 6 is repealed.)

CHAPTER 11

Section 1104 Environmental Air Ducts. Environmental air ducts not regulated by other provisions of this code shall comply with this section. Ducts shall be substantially airtight and shall comply with the provisions of Chapter 10. Exhaust ducts shall terminate outside the building and shall be equipped with back-draft dampers. Environmental air ducts which have an alternate function as a part of an approved smoke-control system do not require design as Class 1 product-conveying ducts.

Ducts used for domestic kitchen range ventilation and domestic clothes dryers shall be of metal and shall have smooth interior surfaces. Commercial dryer exhaust ducts shall be installed in accordance with their listing. For additional requirements for domestic dryer exhaust systems, see Section 1903.

EXCEPTION: Approved flexible duct connectors ~~not~~⁽³⁾ ~~more than 6 feet~~ in length may be used in connection with domestic dryer exhausts. Flexible duct connectors shall not be concealed within construction.

~~Bathroom and laundry room exhaust ducts may be of gypsum wallboard subject to the limitations of Section 1002(a).~~ Exhaust ducts shall not extend into or through ⁽⁴⁾⁽⁹⁾ ducts or plenums.

Section 1105(a) is amended by adding EXCEPTION 2. as follows:

EXCEPTION 2. Class I product-conveying ducts that⁽⁹⁾ operate at negative pressure and convey noncorrosive, nonflammable, nontoxic, and nonexplosive materials at temperatures not exceeding 250°F may extend through plenums.

CHAPTER 12

Section 1205 Condensate Control. ⁽³⁾ is repealed.

CHAPTER 13

Section 1303 Access, Inspection and Repair. ⁽⁵⁾ Evaporative coolers shall be accessible for inspection, service and replacement without removing permanent construction.

Access to an evaporative cooler located on a roof or on an exterior wall of a building shall be provided as required for furnaces by Section 710 as amended.

CHAPTERS 14-18

No Amendments

CHAPTER 19

Section 1903(a) Moisture Exhaust Ducts. ⁽⁹⁾ Moisture exhaust ducts shall terminate on the outside of the building and shall be equipped with a back-draft damper. Screens shall not be installed at the duct termination. Ducts for exhausting clothes dryers shall not be connected or installed with sheet metal screws or other fasteners which will obstruct the flow. Clothes-dryer moisture-exhaust ducts shall not be connected to a gas vent connector, gas vent or chimney. Clothes dryer moisture exhaust ducts shall not extend into or through ducts. ~~or plenums~~

Section 1903(b) Length Limitation. is repealed. ⁽⁵⁾

CHAPTER 20

Section 2002(d) Duct Enclosure. is amended by adding the following Exception:

EXCEPTION: Where the ducts pass through an attic space, the total ⁽²⁾ total thickness of fire-resistive material may be applied to the duct side of the shaft enclosure.

Section 2004(b) Fire-extinguishing Equipment for ⁽⁵⁾ Protection of Kitchen Grease Hoods and Ducts. Approved fire-extinguishing systems shall be provided for the protection of commercial food heat-processing equipment in accordance with the Fire Code.

APPENDIX A

No Amendments

APPENDIX B

Appendix B, Chapters 21, 22 and 23 are repealed. ⁽²⁾

REFERENCES

- (1) Ordinance 756 - Effective 4-26-75
- (2) Ordinance 756.11 - Effective 8-29-81
- (3) Ordinance 756.13 - Effective 6-26-83
- (4) Ordinance 86.58 - Effective 10-27-86
- (5) Ordinance 89.60 - Effective 1-14-90
- (6) Ordinance 90.40 - Effective 9-9-90
- (7) Ordinance 91.21 - Effective 1-27-92
- (8) Ordinance 93.18 - Effective 7-24-93
- (9) Ordinance 94.20 - Effective 8-13-94